

UNIVERSITY COLLEGE, BRISTOL 1876-1909



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BRISTOL BRANCH OF THE HISTORICAL ASSOCIATION
LOCAL HISTORY PAMPHLETS

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University College, Bristol, 1876-1909 is the fortieth pamphlet to be published by the Bristol Branch of the Historical Association. It is based on the Frederick Creech Jones Lecture which Mr. Sherborne delivered in the University of Bristol in October 1976 as part of the celebrations to mark the centenary of the founding of University College, Bristol. Mr. Shelborne has, however, added a considerable amount of new material which has not hitherto been published.

The Branch wishes in the first place to acknowledge the financial help which it received from the F. C. Jones Memorial Fund which was set up under the terms of Mr. Jones's will to endow lectures on local history. Four lectures have so far been delivered, and this is the second to be published by the Bristol Branch of the Historical Association.

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The next pamphlet in the series will be Professor Peter Marshall's *Bristol and the American War of Independence*.

The Branch appeals to all readers to persuade others to buy the pamphlets and to help by placing standing orders for future productions.

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UNIVERSITY COLLEGE, BRISTOL : 1876-1909

University College, Bristol opened its doors on the morning of Tuesday, 10 October 1876 and at 9.00 a.m. Mr. W. R. Bousfield — a forgotten figure of the past — lectured on Mathematics. He was also responsible for Higher Mathematics at 10.00 a.m. Later there were lectures on Modern History and on Applied Mechanics (11.00 a.m.) and on Modern Literature at 12.00 noon. In the afternoon Geology (2.00 p.m.) and Greek (3.00 p.m.) took their turn. This was, we may think, a versatile start on the first day of the new institution. Other lectures during the first week included Chemistry, Experimental Physics, French, Zoology, German, Latin, Chemistry and Political Economy. In all during this term fourteen subjects were taught in day and in evening classes. It is clear that each member of staff moved swiftly into action and that the College was anxious to demonstrate the range of its teaching, wishing to draw upon an unpredictable catchment area. In a world of uncertainties one thing was clear. The College offered a variety of academic opportunities which could not be found for many miles. It also believed that what it was offering was cheap, though later competition from an unanticipated source gave rise to second thoughts on this point.

Let us return to Mr. Bousfield. The charge for his lectures was three guineas for two lectures each week during the Christmas and Easter terms. This was the standard fee for a lecture course, but where appropriate there were laboratory charges. There were also registration fees. A student had to pay a 7s entrance fee for one course and the sum of one guinea was an open sesame to any number of courses.

On 10 October 1876 University College, Bristol awaited its first Principal, but there was a staff of two professors and seven lecturers; by December 1876 there were eleven lecturers. A number were only part-time, such as Adolph Leipner, Lecturer in Zoology and Botany. He was later promoted to a chair in Botany in 1886, but in 1876 was also employed by the Bristol Museum as a botanist and by Clifton College as a teacher of German. The Professor of Chemistry, E. A. Letts, was twenty-four years of age and had a doctorate of Göttingen to his credit. He was guaranteed a minimum salary of £400 per annum which was to include fifty per cent of fees paid for his lectures and a third of his laboratory charges. The remuneration promised to James Rowley, Professor of Modern History and of Modern Literature, was only £350. He was, it seems, a charmingly articulate Irishman, eloquent, persuasive and later, as it was to prove, conservatively cautious. Rowley

was the only original appointee who was to devote the remainder of his career to the College's service and when he retired almost thirty years later (1905), he enjoyed a reputation for learning. He must have been better to listen to than to read, for he never wrote more than an elementary textbook and his unpublished lectures lack insight. Perhaps the most distinguished of Bristol's first recruits was Silvanus P. Thompson, a graduate of London, who later became Principal of Finsbury Technical College in 1885. Thompson was appointed Lecturer (and then, in 1878, Professor) in Physics; electricity interested him most and was the field of study which was to earn him a reputation. The youth or comparative youth of the staff of the new College requires emphasis and a schedule of appointments which some of them enjoyed after service at Bristol makes interesting reading.

But what of the students of University College, Bristol? Let us not be misled by the associations of the word 'university', for the College had no power to award degrees. Within a few years Certificates of the College and, for those who pursued systematic studies for two years or more, Associateships were granted; but these were internal matters, praiseworthy, but not cutting much ice in the world at large. Slowly, and almost reluctantly, late nineteenth-century England was beginning to acknowledge that there might be merit in a university degree. An accolade of this kind was only an occasional experience for the students of Bristol. The path was set in 1883 when the award of a B.A. in Arts to a student was granted by the University of London through external examination. This was at the end of the seventh session of University College, Bristol. We need therefore to abide in patience. Students needed instruction in walking before there could be tuition in running. In these early years we must consider two things — the state of elementary and secondary education, which left a great deal to be desired, and the usually humble qualifications of those who entered University College in and after 1876. For students who were academically better equipped, the College offered eight scholarships of which the most valuable was one in Chemistry, worth £25 a year. Of greater interest were four general scholarships of £15 per annum, tenable for two years, by women. It was an axiom of the promoters of the College that women should have the same opportunities as men within its walls, except in Medicine. But scholarships were for the high-fliers. Any student might enter without examination at the age of sixteen. Those under sixteen were required to pass an examination in English Grammar and Composition and in Elementary Mathematics. In 1876 there were in fact comparatively few Bristol children who had an opportunity to stay

at school until the age of sixteen, and throughout the history of the College there can have been few, if indeed any, who could have met the matriculation standards of a modern university.

During the College's first year, 99 day students (30 men and 69 women) registered and the number of evening students was 238 (143 men and 95 women); the evening lectures cost five shillings a term for each subject with a registration fee of one shilling. Accommodation for classes and laboratories was cramped and the first building used by the College was suitable only in the short term. Two houses in Park Row, which until recently had been used as a Deaf and Dumb Institute, had been rented for £50 per annum and had been economically adapted for student needs. (The houses were demolished some years ago and in their place a block, now partly occupied by the A.A., was built. There is a commemorative plaque in the foyer).

The College had been established to fill one of the many gaps in the educational resources of Bristol and the neighbourhood. In 1871 the national census revealed that the City and County of Bristol had a population of almost 220,000. In 1800 the population had been about 68,000: in 1901 it was to be 333,000. Here was spectacular growth, but since 1800 a number of towns had outstripped Bristol in population and in wealth. Bristol was no longer the second city in the land, nor were the massively expanding resources of commerce and industry which were to be found in Liverpool, Manchester, Leeds, Sheffield and Birmingham present.

But what of the educational opportunities for the young in Bristol in 1876? It was not until the Education Act of 1870 that Local School Boards were empowered at their discretion to require school attendance up to the age of twelve. Even then schooling was only free for the very poor. Most children, it is true, received some education (though often not beyond the three Rs) in the welter of schools established earlier in the century — Anglican schools, Nonconformist and Catholic schools, and private schools. Education and its shortcomings, the opportunities lost individually and nationally through deficiencies, the incentives, the duty to reform and to extend were discussed again and again. Some argued that to impose compulsory education involved interference in the relationship between parent and child. Others — and they were a growing band — asserted that the country could not afford not to interfere. Education was a commercial and industrial tool, an armoury against the foreign competitor. This was true at each step in the educational ladder. They pointed to the Technical High Schools of Germany and the increasing pursuit of applied science in the universities of Germany and elsewhere. The breadwinners of the fa-

mily must be better equipped, and thus all might prosper. Nor should daughters, who might in due course become wives and mothers, be neglected. Here the arguments were egalitarian.

By modern standards Bristol was starved educationally in the 1870s. Bristol Grammar School, then flowering out of obscurity, had only twenty pupils over sixteen in 1864 and a tiny number of old boys at Oxford or Cambridge, both of which had only recently started to come to terms with the needs of a modern society. The costs of Oxbridge were commonly £100 a year and more. The merchant aristocracy might send their sons away to boarding schools, but these too were expensive. Clifton was added to the select band of so called public schools and the demand for day-boy places there met an urgent need of the better-off. Opportunities for girls were even less adequate. The foundation of Clifton High School for girls in 1877 and of Redland High School in 1882 were significant steps in the right direction. Yet there remained those who doubted whether the 'weaker sex' were not innately and demonstrably inferior in mind as well as in body. It was not until 1880 that the University of London made its degrees open to women.

One man who played a national part in the growth of educational opportunities for women was the Reverend John Percival (1834-1918), who, at the age of twenty seven, and after only two years teaching at Rugby, became first headmaster of Clifton. A product of Appleby Grammar School, who retained a north-country accent throughout his life, he had garnered degrees and honours at Queen's College, Oxford. During his seventeen years at Clifton he transformed what had begun as a modest and tentative venture into a famous school. For him Christianity was intimately linked with a profound social conscience which favoured and sought to promote opportunities for boys and girls, men and women, irrespective of their declared belief.

This brings me to the origins of University College, Bristol, for Percival was one of a small group of men who helped to create it and to shape its fortunes for more than a generation. It would be hard to find a better witness than Lewis Fry (a great man to whom we shall return) who said that 'he was quite of the opinion that they owed the foundation of the College — as far as that statement can be made — to Dr. Percival'. In 1872 Percival, characteristically trying to improve the present and to endow the future, wrote a circular letter to Oxford colleges stressing the absence of university culture in the provinces. Could not some way of helping be devised?

Three months later, in December 1872, Bristol Medical School (1833) was discussing its needs for a new building and decided to

canvas support. Then on 7 February 1873 at a meeting of the Medical School Council, Mr. Thomas Coomber suggested an approach to the Bristol Museum and Library Society 'in a joint effort to establish a College of Science, of which the Medical School should be one department'. This society was the result of the amalgamation of two independent subscription societies. On 11 March 1873, after earlier exchanges, a committee of Medical School and Society representatives resolved that 'it is desirable that a Technical School of Science be established in Bristol'. A committee to promote the scheme was formed under the chairmanship of the Dean of Bristol, Gilbert Elliot (then in his seventies but full of vigour). There were three secretaries: Lewis Fry, a Liberal and chairman of the Bristol School Board from 1871-1880; William Proctor Baker, a Conservative active in local politics, Master of the Merchant Venturers in 1869 and a corn merchant; and William Lant Carpenter, nephew of Mary Carpenter, a Unitarian, an engineer and soap manufacturer. Proctor Baker was to serve patiently and invaluablely as Treasurer of University College from 1876 to 1893. John Percival was co-opted to this committee and, as Lewis Fry later remarked, it was 'to Percival they owed the invaluable connection of the College with Oxford'.

John Percival was a friend of Benjamin Jowett (1817-1893), Master of Balliol and Professor of Greek; so too was Gilbert Elliot. It was through one of them, probably Percival, that Jowett learned of the Bristol project. Jowett was greatly interested. He was also constructively critical. He wrote of 'the beginning of a movement which we must not allow to let drop'. He offered his support provided that instruction in the College should be literary as well as scientific, that the requirements of adult education were specially considered, and that classes were made available to women as far as possible. On these terms Balliol would subscribe £300 a year for five years and he would search for support elsewhere in Oxford. New College later joined Balliol. An offer of the kind made by Jowett, a sponsor of great repute, was too handsome to be neglected. Immediately the committee changed its plans and thenceforward a College of Science and Literature was the aim.

Many years later Jowett was to write to Albert Fry (1830-1903), younger brother of Lewis Fry (1832-1921), 'There are few things in life which I look upon with greater pleasure than the share which I was able to take in the foundation of University College, Bristol'. In 1873 Jowett had been head of his College since 1870. As yet his formidable reputation was still in the making, but by the time of his death he had left a mark upon Balliol and upon his University which is still remembered. Like his friend John Percival he was

aware of the responsibilities which privilege entailed. He had a keen awareness of the blessing endowed upon those who had been educationally favoured, and he knew the alarming gap which separated those people from those who were less fortunate. A reformer of his own University, he knew better than most the consequences of the indiscriminate favours of chance in an educational system which had more to learn than it was at present capable of teaching. In later years, after Balliol's contributions to the College had ended, he was to contribute £1,200 of his own money. Each year he was to attend meetings of the University College Council. 'He said very little', we are told, 'but when he spoke every member round the table felt that he had said what ought to be said, and what he himself could have wished to have said'. In 1891 Jowett followed Gilbert Elliot as President of the College.

Jowett was an Anglican whose faith had wide implications. Albert and Lewis Fry were Quakers. Neither were university men, but both gave much time and a fair amount in money to the College. The Frys were aware of the social value of a University College to the neighbourhood and their advocacy was a form of community service. Lewis and Albert were two of the four sons of Joseph and Mary Ann Fry. Each achieved distinction, for Joseph Storrs Fry (1826-1913) built up the chocolate business which he inherited from his father and his workforce increased from fifty to over five thousand; Edward (1827-1918) became a Justice of Appeal (the first if not the only, Quaker to achieve such distinction) and twice refused the offer of a peerage; Lewis qualified as a solicitor and sat as a Liberal or Liberal Unionist member of parliament for many years and was nominated a Privy Councillor in 1901; Albert helped to found the Bristol Wagon and Carriage Works Co. where he made his career. The Frys were by no means the only lay friends of the College, but as leading members of a closely knit and dedicated group they did everything in their power to sustain and nurture it and without their faith, counsel and encouragement there might well have been no charter creating a University of Bristol in 1909.

On 11 June 1874 an impressive meeting was held in the Victoria Rooms to promote a 'College of Science and Literature for the West of England and South Wales'. There were many distinguished educationists present and a fine array of the citizenry. The aims of the College planners were defined — to promote proper scientific and technological teaching, particularly with engineering, mining, metallurgy, manufactures and commerce in mind. The meeting also emphasised the 'growing conviction that all subjects which form the staple of university teaching should be made more widely ac-

cessible'. The local newspapers were strong in support, the role of the Oxford colleges was stressed; but how generous a response to the appeal for funds would there be? Frederick Temple, Bishop of Exeter, and others thought that the College committee had pitched its sights too low in asking for a capital sum of £25,000 and annual subscriptions amounting to £3,000 for a period of five years.

There was early proof of generosity, but Temple's warning was correct and in the event, the total response was disappointing. By October 1877 only £25,991 of the £40,000 requested had been promised, of which £12,307 had been received. There were at least two consequences. The opening of the College was delayed until 1876. Secondly, when the College did open, it did so necessarily under most stringent financial supervision. By 1881 only £22,437 or 56 per cent of the 1874 appeal had been forthcoming.

A gift of £1,000 was promised by the Society of Merchant Venturers, an ancient association of citizens which stretched back to the mid-sixteenth century and which had once been influential in the administration of Bristol's port and commerce. These days were past and the Society was now largely devoted to the deployment of trust funds committed to its custody over generations. The £1,000 gift is interesting in view of the animosity and rivalry which was to develop between the Society and the College after 1890. The Merchants were in large part the heirs of old-established family businesses, retaining an interest in foreign commerce. They were usually Anglican in faith and Conservative in politics. Notwithstanding William Proctor Baker, who was, as we have seen, Master of the Merchants in 1869, there was little of Conservative support for the College. It is interesting that the families of Wills and Fry to which the College, and later the University of Bristol, were to owe so much were Nonconformist and almost always Liberal in faith and sympathy. Members of both families subscribed in 1874. Lewis Fry was one of eight men to give £500 while Frederick and H. O. Wills each gave £250. Several factors were absent in Bristol which can be found in other towns where university colleges were founded about this time. There was an absence of really large accumulations of new money from mass-producing industries. A relative absence of *nouveaux riches* was accompanied by a similar absence of men who were anxious to express corporate pride through gestures which would indicate that their town had arrived and was now a power in the land. Finally, there was the absence from Bristol of any one really significant industry which might provide funds to advance applied science for the mutual advantage of the College and the industry. In a sense, and despite her great in-

crease in population, Bristol in the later nineteenth century was still in part living off the fat accumulated by earlier generations. Her port had lost ground as ships became bigger. The river Avon was still busy but some expensive lessons had shown that there were other ports, not least Liverpool, where bulk carriers could trade far more safely. Bristol's cloth production had dwindled long ago and the West Riding of Yorkshire was prospering. The Industrial Revolution had not exactly passed Bristol by, nor was there an absence of talent in the city. Bristol remained a great and growing city, but the dynamic of earlier years had ebbed. Herein lay part of the reason why University College, Bristol began and continued as one of the poorer members of the family of new colleges which emerged in the later nineteenth century.

Yet Fortune is seldom wholly discriminatory in the favours which she provides or withholds. University College, Bristol survived throughout its existence on or near the poverty line. The most precious assets which it possessed were its friends, and the calibre of its staff. Most of the staff, it is true, are now little more than names in a list, but they must have worked hard to keep the College alive. Sometimes, moreover, able and respected teachers more than justify their salaries without writing major works. There was, nevertheless, a remarkable number of able men employed by the College and a few of them achieved eminence. This was particularly the case with the three Principals of University College, Bristol. Alfred Marshall (1877-81) and Dr. William, later Sir William, Ramsay (1881-87) would have been outstanding men in any generation. Conwy Lloyd Morgan (1887-1909) is more difficult to assess, as the focus of his concentration moved from one subject to another. It has been suggested that he was 'the last of the encyclopaedists'.

Marriage brought Alfred Marshall to Bristol. The son of a cashier of the Bank of England, he had graduated as Second Wrangler at Cambridge in 1865. His father had hoped that he might seek ordination, an idea which Marshall countenanced for a time. Then in 1868 he was elected to a fellowship in Moral Science at St. John's. An interest in Political Economy developed quickly, but he published only an occasional article. One of his early pupils was Mary Paley. One of the first group of women to take honours at Cambridge, she sat the Moral Sciences Tripos in 1874 as a student of the Association for Promoting the Higher Education of Women in Cambridge. The nucleus of students to which she belonged became Newnham College and in 1875 Miss Paley was appointed lecturer in Economics. Marshall's engagement to Mary Paley led inevitably to the resignation of his fellowship, and on 26 July 1877,

his thirty-fifth birthday, he was appointed first Principal of University College, Bristol and Professor of Political Economy. In later years Marshall was to acquire an international reputation and among his pupils was John Maynard Keynes. Bristol brought him into a new world and one which he found somewhat uncomfortable. It was hard for him to reconcile his ambitions as a scholar—and he had already shaped in his mind the work he wished to do — with the chores which his office involved. He disliked his commitment to go round ‘begging’. But someone had to do this, for how else would the College survive? He was also conscientious to a degree and William Ramsay complained about the Principal’s insistence upon checking the marks of all scholarship papers. Ramsay’s first impressions of Marshall were unsympathetic—‘an ascetic man, all mind and no body’ — but soon mutual respect grew. Marshall’s absence of ‘body’ was wide of the mark, for he was a great walker.

The first Principal’s lecturing in Bristol was confined to evening classes ‘composed chiefly of young business men’. Mrs. Marshall took his daytime classes and had audiences mainly of young ladies; her fee was deducted from her husband’s salary. Here we have, *locum tenens*, the first, albeit part-time lady member of staff. Jowett and Percival no doubt approved! Such was Alfred Marshall’s discomfort in his office that in November 1879 he tendered his resignation; the burden of administration, he submitted, was more than he could carry. Eventually he was persuaded to continue for another year, subject to some re-arrangement of duties, appreciating that if he withdrew after little more than two years of service, there were some who might suspect that he lacked faith in the College. In 1881 Marshall resigned again and many years later he explained his action by saying that he was ‘rapidly dwindling’ in health. In fact he was suffering from stone in the kidney. Fortunately Marshall was not as ill as he imagined himself to be. Nevertheless, as J. M. Keynes recalled: ‘he remained for the rest of his life somewhat hypocondrial and inclined to consider himself on the verge of invalidism’. Bristol itself, it is clear, was not uncongenial to him, for Marshall returned to the College in a professorial capacity for most of the academic year of 1882-83. He then moved to Balliol (the Jowett connection again) and then to the Chair in Political Economy at Cambridge in 1885. He died in his eighty-second year.

If Alfred Marshall (whose memory is perpetuated by the building named after him in Berkeley Square) regretted administration, this was not the case with his successor William Ramsay, a Glaswegian of fine intellect and daunting application. Ramsay took up the chair of Chemistry in February 1880 when he was twenty-

seven. Less than two years later he succeeded Marshall as Principal. His academic background might seem somewhat unconventional in that he had acquired a doctorate in Chemistry at Tübingen without a first degree. He had, however, spent several years (beginning at the age of fourteen) at the University of Glasgow pursuing Arts and (for one year) Science. When he arrived at Bristol his reputation as a chemist was little more than embryonic. It was clear, however, that he was strong and purposeful. Marshall spotted this quickly and saw that here was a man to be reckoned with. We may here note that after he left University College, Ramsay received no less than fifteen honorary doctorates. In 1880 he said he was 'horrified' by the state of the laboratory in Park Row which he inherited from Dr. Letts — the glass from broken equipment littered floor and benches. Letts 'must have been a most disorderly man', Ramsay commented sadly. But here there was irony as Ramsay was never a tidy man himself. He was able to start anew in 1883 with a purpose-built laboratory which he described to his father as being 'as nice a little laboratory as is to be found for its size'. Here he worked with his assistant, Dr. Sydney Young (appointed May 1882), and a flow of papers followed which laid the foundations of his later distinction. Young, began at £100 per annum and eventually succeeded Ramsay in his chair. He was elected F.R.S. in 1893 at the age of thirty-five.

Dr. Ramsay's energy was admired by all. His habitual dress — morning coat and bowler hat — was regarded as unconventional, but who should question his right to dress as he chose? In 1887 he moved to the prestigious chair of Chemistry at University College, London. His friends and colleagues congratulated him and wished him well. It would have been ungenerous not to bless one who had given so much to University College. We cannot be entirely sure why Ramsay made his decision. The fact that he tendered his resignation at a time of acute financial stringency for the College was perhaps relevant. The year 1886 was one of crisis. A sub-committee of Council reported that 'certain economies are absolutely essential' and these included a reduction in the Principal's salary. Other projected economies will be referred to later. I am disposed to believe that Ramsay's resignation in 1887 was not primarily determined by considerations of personal finance. When he considered the future, he recognised that there would be more favourable opportunities to pursue his research in a better financed laboratory elsewhere. There he might advance the work which was his basic calling.

Conwy Lloyd Morgan, Ramsay's successor, was a polymath if ever there was one. Appointed lecturer in Geology and Zoology in

1884, he was within months promoted to a chair. He had a long black beard and swept round Bristol, to the alarm of many, on a bicycle, which was as yet almost a new invention. If his gyrations represented a distinctive combination of learning and movement, so too did his intellectual progress. He described himself as a 'hireling' in the subjects of his first chair. He had qualified in engineering at the Royal College of Mines and later studied, briefly but highly formatively, under T. H. Huxley at the Royal College of Science. By the time he arrived at Bristol he had been a private tutor in North and South America, taught a disarming variety of subjects at a diocesan college in South Africa and climbed the Matterhorn. He was no gifted administrator and was later to be accused of 'timidity' over the university issue. Recollections of his fine baritone voice echo in his obituaries. His studies moved into the field of animal behaviour and a colleague who presented him with a mouse for observation found a chicken run — 'these callow fowls', as Lloyd Morgan called them — in his study. In this field Lloyd Morgan made his mark and published extensively. The *Dictionary of National Biography* reflects the developing sequences of interests — a chair in Psychology in 1901 (he was the first psychologist to be elected to the Royal Society) was linked to one in Ethics in 1911 — by describing him as a 'comparative psychologist and philosopher'. Such was the financial stringency in 1887 that Lloyd Morgan was granted only the modest title of Dean of University College, Bristol and until 1891 when he became Principal his professorial salary was supplemented by only £100 a year. In 1909 Lloyd Morgan became first Vice-Chancellor of the University of Bristol for a few months and then reverted to the professoriate until 1919.

We have seen that the vital early interests of the Bristol Medical School in the promotion of a college were partly determined by its own need for additional space. After a heated debate between lecturers from the Infirmary (mainly Conservatives) and those from the General Hospital (mainly Liberals) the School decided to affiliate with the University College (July 1876) in return for a promise by the College that it would supply the Medical School with a building at an early date. This was eventually effected in October 1879, but only after delay and misgivings. All was not well with the Medical School at this time. It had no endowments, its teachers argued among themselves, discipline was poor and some examination results were even worse. Eventually a new governing body which afforded the College greater representation was appointed. Before this, however, the College was not prepared to commit its precious money, and when the new building was eventu-

ally opened it was described as 'temporary'. Nevertheless it is still in use in 1977 by the Department of Geography.

This 'hideous blot on the College', this 'wretched brick shed' is now almost masked from view as one walks up University Road towards Senate House. The road was then a cul-de-sac known as Museum Road. It was adjacent to Museum Road that University College Council had decided to pitch its standard. An acre of land was bought in 1876 and later small additions were acquired. The choice of site had occasioned debate. There were still open fields in the neighbourhood but this was a relatively expensive area. Why not, it was argued, move further away to a district where land was cheaper? This suggestion found no favour and thus it was — sometimes to the regret of later Town and Gown — that the University stands where it does today. Our 'wretched brick shed' was eventually shrouded by the building of a new Medical School in 1892 and the incorporation of Medicine into the University College in April 1893. By then the College had begun to make its physical presence felt by a slow progress of building which advanced as subscriptions allowed. The first permanent portion of College building was opened in October 1880 at a cost of £5,144, and was part of a design by Charles Hansom for a quadrangle which might eventually be built at an estimated cost of £40,000. The Arts departments and the administration were transferred from Park Row, but the Principal had no room of his own. In January 1883 an extension to the south costing £9,167 enabled the science departments to move from Park Row. Nine years later the Medical School at last received the permanent building it had sought for nearly thirty years; the cost including fittings was £8,045. The Engineering Wing, which was also long overdue, cost £5,752 in 1893 and an addition, largely financed by Vincent Stuckey Lean (who left £50,000 towards public libraries in Bristol) was finished in 1900 at a cost of £7,648. An extension in memory of Albert Fry (ob. 1903) was added to the north wing in 1904 (£4,108) and the memory of this precious supporter is commemorated in the Fry Tower. A small addition to the 'temporary' medical buildings in 1905 (£1,445) completed the College's building programme. Down to the last year total capital expenditure amounted to less than £49,000 of which £35,744 had been spent on buildings. Of this, twenty-seven per cent had been devoted to the Medical School, £7,216 was spent on departmental fittings and £5,400 on land and roads.

From 1876 to 1889 University College, Bristol was wholly dependent upon fees paid, course by course, by students, upon the subscriptions, laboriously collected from private men and women

and upon some funds donated by corporate bodies. Until 1889 not a penny of public funds, local or national, were paid to the College. In a debate about the choice of a College motto, one disillusioned member of staff suggested that it ought to be 'College is Poor' rather than 'Knowledge is Power'.

Later, I shall consider further the under-endowment of University College, Bristol. But what 'knowledge'? And at what level? Who were the customers and why did they take their trams or come by train to Park Row or Museum Road? In 1882 Council regretted 'that the College has not hitherto succeeded in drawing as many of the industrial part of the population as was hoped to its evening lectures'. There were even fewer working class sons and daughters present during the day. Let us try to put University College into perspective. It had no power, as we have seen, to award degrees and the College was not linked even by the most tenuous of formal threads to another university. In 1876 there were only four universities in England and Wales; Oxford and Cambridge were still in part cobwebbed by theology and law and the expensive attributes of finishing schools for men whose inheritances were secure and who knew that the family could afford their indulgences. There were also the Universities of Durham (1832) and London (1836). University College, Bristol was, however, linked to the University of London by trains which carried the mail back and forth and, through the post, arrangements were made to sit the London external examinations — Matriculation, Intermediate, Preliminary Scientific, B.A. and B.Sc. Other links were with the board of the Cambridge Higher Local Examinations and with the Department of Arts and Science, South Kensington. It would clearly be misleading to speak of the Bristol College in terms of university education as it is known today.

University College, Bristol primarily, but never deliberately and never exclusively, reflected the needs and aspirations of the middle classes of Bristol and of north Bristol in particular. Between 1876 and 1909 much of the College's education was part-time. There was, after all, no stipulation about minimum hours of attendance and we have seen how elementary entrance qualifications were. So it was that young men who had entered a family business came in for a term or two to establish a basic grasp of scientific principles or to improve a particular subject. For a number of students evening classes served more appropriately than day classes. Young ladies from Clifton, Cotham or Redland used the College as an extension course to supplement what their governesses had taught them or what they had learned at some long-forgotten private school. Thus there were numerous birds of passage at the College.

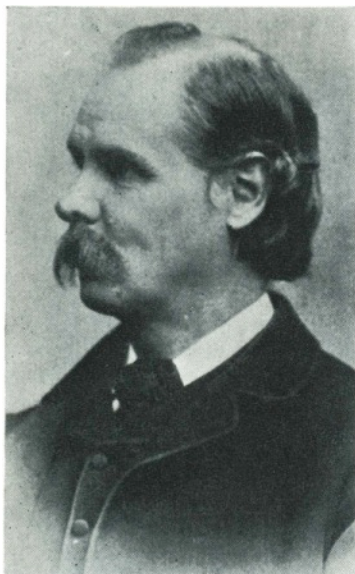
But others had more sustained objectives in mind. The Cambridge Higher Local Examination, for example, which was useful for those who wished to become a governess or a teacher. London Matriculation was of a higher level and before 1909 over 200 candidates from the College passed the examination successfully. Matriculation was a worthy achievement and was accordingly recorded year by year among the successes of the College. In the academic year 1885-1886 seven students satisfied the Cambridge Higher Local Examination board, four matriculated at London, two passed the London Intermediate examination in Arts and two in Science; there were two students who qualified as doctors and one who was awarded a London B.A. Ten years later in 1895-96 the numbers were four matriculations, eleven intermediates, eight doctors and three graduates in Science together with three in Arts. In 1905-6 there were thirteen matriculations, twenty-five intermediates and nine B.A.'s. This was the largest number of degrees in Arts awarded to students of the College before 1909. There was a perceptible growth in degree work with the passage of time, but it was always the concern of only a minority of students. By 1890 twelve bachelors' degrees had been awarded; the 1890s brought fifty — a significant rise; and in the last year of the College twelve were reading for degrees in Arts and sixteen for degrees in Science. All told between 1883 and 1909 (both years included) about one hundred external degrees in Arts and Science were awarded to students of University College, Bristol. Here we have useful achievement, but let us not try to inflate it. By 1909 Bristol was a growing intellectual centre but, notwithstanding the grant of the charter in that year, it is impossible to avoid the conclusion that the College was still at a relatively early stage in university education.

The fortunes and progress of University College, Bristol were by no means unique. It was after all but one of a group of colleges founded in the larger centres of population at about the same time. One point to be stressed is that the diffuse character of industry and commerce in the city and its region produced no truly specialist areas of study as occurred elsewhere. In Leeds, for example, the science and craft of textile production brought money to the local College and helped to promote its research. In the same way metallurgy grew in Birmingham and elsewhere. There were coal-mines in the Bristol area but no demand for mining engineering; the scale of production was too small.

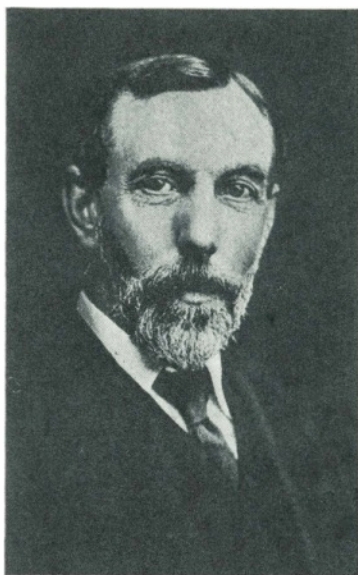
The whole ethos of University College, Bristol was different from what we know in this precinct today. History and English, for example, in one department. A department? Let us rather say a



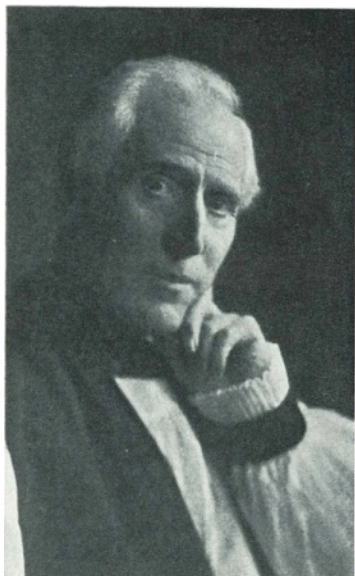
The University College around 1906



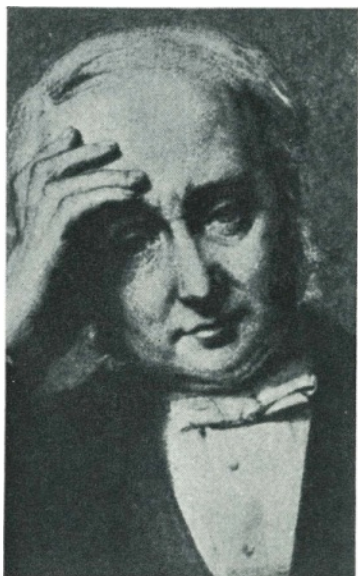
Alfred Marshall



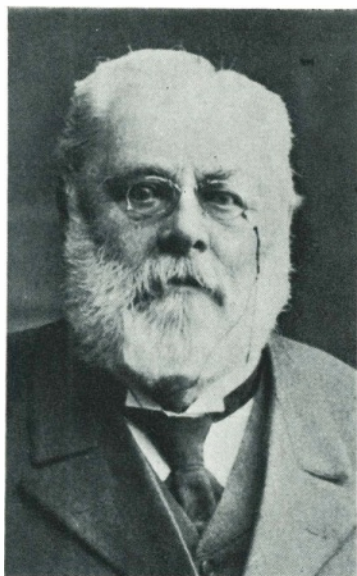
William Ramsay



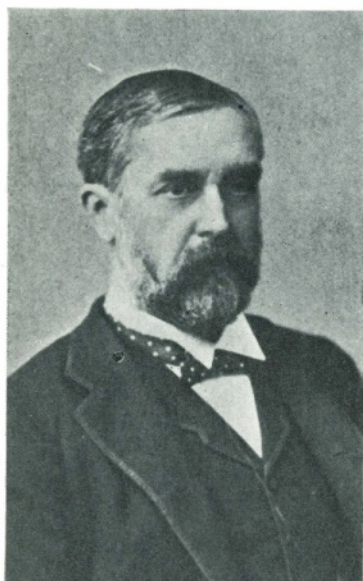
John Percival



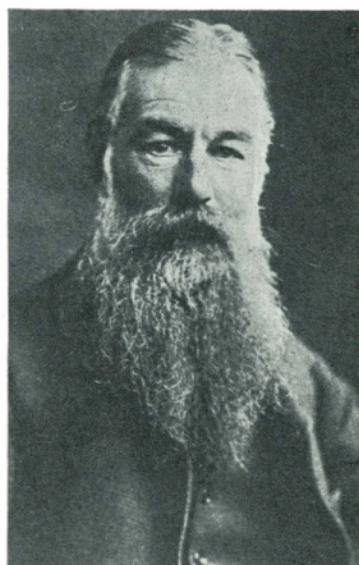
Benjamin Jowett



Henry Overton Wills



Lewis Fry



Conwy Lloyd Morgan

University College, Bristol.

is to certify that
A Madge Herbert
has been elected an

Associate

of
University College, Bristol.

*having diligently attended the
prescribed amount of instruction
in the college, and obtained the
Degree of B. A., in the University
of London.*

W. H. Ford.

President.

C. Lloyd Morgan.

Principal.



subject taught by one man, who might at a later date acquire one or two assistants. Most of the staff were young and for much of the time they were insecure. There were not many of them and it did not greatly overstretch the domestic resources of the Principal's wife to entertain them at a party. Each lecturer knew his colleagues, usually on comradely terms, but there were bound to be stresses and strains when laboratories were shared and lecture rooms difficult to come by. Work was hard and diverse. It required single-mindedness to pursue research when the teaching load comprehended day and evening classes and a range of standards which might vary from elementary to degree standard. Yet some research there was, and in 1900 Council began, as it does today, to print an annual list of works published by the staff.

The curriculum of the College did not change greatly during the passage of thirty three years. On the other hand the content of a syllabus often changed greatly. Advances in science and applied science made this obligatory. Engineering was introduced in 1878 and prospered. There was a brief sally into the teaching of Law to articled clerks, but lectures in Law did not become permanent until after 1890. Two Day Training Colleges for elementary school teachers became linked with University College and these, together with the Secondary Training Department of 1902, formed the original nucleus of the present School of Education.

The 1880s were the most precarious decade financially for the College. By the end of the 1880-1 academic session the College had only £2,679 in hand after its first five years. At this point fees (£7,780) had contributed only twenty-four per cent of the gross receipt (£32,417) of the College since the appeal of 1874. In other words over seventy-five per cent of the College's receipt had derived from charity. The figures for the academic year 1888-1889 — a year chosen at random — were rather more comforting. Fees (£1,967) made up forty-seven per cent of expenditure (£4,155). In this year in fact the College covered its costs with a balance in hand of £444. There were few years like this before 1909. Soon after 1900 there was a year when salaries could be paid only by courtesy of an anonymous gift of £1,000.

On 27 May 1884 William Proctor Baker, the College Treasurer, had sought 'instructions as to the meeting of the College debts after the end of next month when the available funds will be exhausted'. One member of staff had already expressed his dismay about the academic consequences of poverty. In October 1882 Silvanus P. Thompson had complained to Council that 'in every branch of Physics, especially in Electricity, the standard instruments are still wanting This is a state of things which though inevitable

hitherto is altogether unworthy of a university college'. It was 'impossible', he added, 'for your Professor of Experimental Physics any longer to endure the disadvantage at which he and the students in his Department are placed by the fact that the necessary appliances for laboratory work have never been supplied to them'. Thompson vainly offered £50 of his own money should £500 be forthcoming from elsewhere. In May 1884 there was the first reference to a College overdraft and the Treasurer was empowered to say that members of Council would guarantee it. A short relief came in 1885 when the profits of an Industrial and Fine Arts Exhibition, which had been held on College land, were donated. The sum, £1,520, was a large amount by College standards and was partly devoted to buying a testing machine for Engineering. The rest was used for general purposes. A few months later William Ryan was appointed to a joint chair of Physics and Engineering, hitherto separate, and by this appointment a 'decrease in annual expenditure' was effected.

In November 1885 Council reported a steady increase in male students at day classes, which proved 'that the College is being resorted to for complete education'. In the previous session 124 men had studied 369 courses, an average of three courses each. Sixty-one women had taken ninety courses, roughly 1.5 courses each. The preponderance of male students compared with the academic year 1876-77 may be noted and was to continue. In the year 1884-85, although fees (£2,317) had produced only 52 per cent of the College's income (£4,461), the gap between receipt and expenditure had been narrowed by the £1,070.10s received from the Sustentation Fund. This was a vital contribution, but it would need false rhetoric to suggest that in relation to the resources of Bristol citizens, it was a large sum. This had not been a good year economically, but even in a year of recession more might have been hoped for. It is impossible to avoid the conclusion that the University College was of minor interest among competing philanthropic causes. And the sums of money described were, by any standards, tiny.

The winter of 1886-87 was a demoralising time for University College, Bristol, and Jowett, when he heard the news, was dismayed. What credit was there here, he asked, to the citizens of Bristol? The College was teetering on the edge of bankruptcy. Reference has already been made to the proposed reduction in William Ramsay's salary as Principal. But there were even graver consequences elsewhere. The salary of the Professor of Classics was reduced and English and History, it was decided, should henceforth be put on a self-supporting basis, i.e. reward would be

limited to what might be received from fees, and fees only. It is scarcely surprising that James Rowley took legal opinion about the terms of his appointment, now more than ten years old, and clearly indicated that he intended to fight for what he regarded as his rights. Fortunately there was never total collapse in confidence among those who carried the daily burden of College teaching; apprehension of impending crisis was not a new experience. In the event the storm was weathered. No fairy godmother emerged with transforming bounty, but the College struggled by and, except for a cut in the Principal's fee, professors survived.

The year 1889 was a turning point, for after a sustained campaign the Exchequer granted £15,000 to fund university education. Ramsay, who had led the demand for state aid before and after he left Bristol, regarded the award philosophically. It was not much, but it was not a 'ridiculous sum'. At least the principle of subvention had been established. The Exchequer had brooded as to how to partition the award and eventually decided that government contribution should be geared to local contributions. By this yardstick Bristol fared less well than several others. A sum of £1,200 per annum, which was granted to Bristol for five years, and then renewed until 1904, when the receipt was raised to £4,000, could not be despised. Soon after 1889 there followed modest grants from the local authority. A capital grant of £2,000 devoted to funding a building extension, which in the event cost more than twice that sum, was ambivalently received by the Treasurer who regretted that the new building added nearly £150 to the annual rates. Rates were of course a standing charge and the Treasurer had a point to make. There were also local grants to underwrite new scholarships. In the longer term what really mattered was that University College now possessed a measure of public support both from the state and from the local authority. The grants made were small in relation to the needs of the College and were no more than a partial barrier against financial threats. Happily the moment of capitulation never came. In 1900 the College almost balanced its books. And yet, as we have seen, it required an anonymous donation a year or two later to enable it to pay salaries. There can have been few at the turn of the century who can have seriously anticipated the day when University College might achieve a charter, the reality of independence, the power to grant degrees of a University of Bristol. In 1904 a new Professor of Chemistry was dismayed to find only two journals in his subject in the library and before 1909 Arthur Chattock had personally financed equipment in the Department of Physics at a cost of £800, a sum which was approximately double his annual

salary. No wonder that a contemporary said that some teachers could not have survived without private means.

A consequence of state aid to university colleges was an occasional government inspection. University College together with its peers was visited during the academic year 1896-97 and a parliamentary paper was published in June 1897. The report was favourable. One suspects that the inspectors were sympathetic to the new colleges, but they were also men of integrity. What they reported about Bristol must have made pleasant reading for the staff. Their assessment comes closer to an objective view than can be derived from other sources. Teaching in the Arts, they said, was 'good'; in Mathematics it was 'excellent'; in Physics and Chemistry teaching was thorough and the advanced portion of study 'is in some respects more complete than in many other colleges'. In Arts and Science there was 'vigorous work of university type' and the College had a 'fair record' in examinations. On the other hand the staff was inadequately small, professors were not well paid and chairs were not endowed. Teaching at different levels concurrently made severe demands upon the staff and extensive evening commitments were demanding. Students were preponderantly local and were drawn from all classes. Engineering students were exceptional in that they came from all parts of the kingdom. There had been a steady increase in those taking three-year courses, but most of these were drawn from the 'higher classes'. Inevitably the weak finances of the College was emphasised. Buildings were agreeable but small. There was a need for more lecture rooms, funds for the maintenance of laboratories were 'decidedly small', the Principal had no room of his own and there was a 'pressing want for a good general library'. This report seems to hit precisely the right note.

One further comment of the inspectors demands attention. This is their reference to a Bristol technical college which through offering certain courses at substantially lower cost had begun to draw off some who might otherwise have entered University College. This college had become by 1897 the cause of some anxiety in Tyndall's Park. It had its origins in the Bristol Diocesan Trade and Mining School which had been founded in 1856 with a primary department, a secondary department teaching commercial subjects, mathematics and applied science, day classes for adults in chemistry, mining and engineering, and a range of evening classes in languages, mathematics, drawing, commercial subjects and Latin. The School proved popular and in due course prepared its senior pupils for the examinations of the Science and Arts Department, South Kensington and of the London Institute (City and Guilds). Any suggestion of competition by the foundation of

University College is more apparent than real, because the College primarily sought those whose aspirations were more advanced and rather more academic. In 1880 the Society of Merchant Venturers decided to endow the School with a new building. A member had bought a site in Unity Street for £5,500; the building was completed in 1885 at a cost of nearly £30,000. This generous expenditure involved a far greater capital outlay than University College had yet been able to command and was in fact not significantly less than the total capital expenditure of the University College before 1909. In 1885 the Society assumed control of the management and finance of what now came to be called the Merchant Venturers' School. Ironically the headmaster was that Thomas Coomber whose suggestion to the Medical School Council in 1873 had initiated the movement which led to the foundation of University College. In June 1890 Coomber was succeeded by Julius Wertheimer, an able and ambitious man, who within a few years was respected but heartily disliked by most of the council of University College. With the helpful but by no means lavish support of the Merchants, his School expanded rapidly and broadened its scope; its fees were modest. Whereas in 1890 there had only been 48 pupils in 'senior day classes', by 1903 the number attending 'adult day classes' had risen to 287: evening class enrolments had grown from 968 to 1,458. The evening classes, which included such subjects as shorthand, photography and carpentry, encompassed a market which the University College never sought. The chief source of anxiety for Lloyd Morgan and his colleagues and his friends on the Council was that in 1894 the Venturers' School, renamed the Merchant Venturers' Technical College — indicating, it was claimed, 'precisely the kind of education which it supplies' — had entered the field of intermediate and higher education and before 1900 there was direct competition in the Matriculation, Preliminary and Intermediate examinations as well as in Engineering courses. The Technical College also had a small but growing roll of B.Sc. graduates to its credit. Not surprisingly there was acrimony and mutual recrimination as well as an awareness that it was sad that there was some duplication of facilities. Serious attempts were made to partition responsibility and there was external arbitration; there was also some bad blood. Coordination and amalgamation were debated and rejected. There were errors of judgement and tact on both sides and these were exacerbated by political differences. Neither the University College Liberals nor the Society Conservatives trusted each other, and both groups were properly proud of what they had achieved. As we shall see, there might have been a University of Bristol before 1909 but for these antagonisms.

At the turn of the century pride and anxiety were evident in University College thinking. Something valuable had been accomplished during the past generation, but there could be no escape from nagging doubts about the future. There was no pleasure in being a poor relation. An Annual General Meeting on 16 November 1898 reported a recent resolution of Senate: 'it is desirable in the interests of higher education in the West of England that immediate steps be taken for bringing before the public the desirability of founding a West of England University in Bristol'. An admirable sentiment, but somewhat premature in the context of a College with an endowment revenue of less than £200 which was wholly devoted to scholarships. The College however commanded its measure of goodwill and one sign of this was the foundation (April 1899) of the University College Colston Society, a body which sought to enliven the tradition of one of Bristol's greatest benefactors (Edward Colston, 1637-1725) by dining once a year and by collecting money 'for the endowment of Colston Chairs in connection with University College, Bristol or to assist the College in such other manner as the Committee of the Society may approve'. The body was non-political. At the first dinner on 7 December 1899, when £305 was collected, James, later Viscount, Bryce asked why Bristol should not become the home of a Western University. This idea of a regional university was repeated at the Colston dinner in 1901 when John Percival, Bishop of Hereford (1895) and President of the College since 1893, asked why, if Birmingham had recently received a charter, there should not be a Bristol and West of England University. In 1903, R. B., later Viscount, Haldane, a great supporter of new universities, formulated the idea of a federal West of England University comprising Bristol, Reading, Southampton and Exeter. Haldane became Chancellor of Bristol from 1912-1928.

But Bristol, it was objected, had no Carnegie. How might an endowment of £200,000, the sum later elicited from the Privy Council as a result of discreet soundings as the minimum endowment for a university, be collected. There had, it was true, been several anonymous donations of a £1,000 recently, but how could the gap be bridged between £200,000 and an existing capital which yielded only £200 a year for scholarships? There was another longer term question which was soon to stimulate concern. How would University College grow without more land?

When Morris Travers succeeded Sydney Young as Professor of Chemistry in 1904, he arrived like a gusty, and sometimes exasperating, blast of wind. A pupil and then a colleague of William Ramsay at University College, London he was an able man (elected to

the Royal Society in 1906), restlessly energetic and an almost compulsive presence. Modesty, it seems, was not his strongest suit. Most of his senior colleagues, he recorded, did not seriously believe in a University of Bristol. The veteran James Rowley thought the idea an absurdity and Lloyd Morgan, charming and scholarly though he was, gave no lead. Therefore some heat and light must be generated. This Travers, if we are to credit autobiographical fragments based upon a diary written nearly fifty years earlier proceeded to do. He visited R. B. Haldane and studied other universities and colleges, he ghosted leaders for the local press whose aid he stimulated and he wrote a pamphlet for private circulation which was later published. He sought advice in the city and of Lewis Fry who succeeded his brother Albert as Chairman of Council in 1903. The two brothers held this office continuously between 1882 and 1909. Of Lewis Fry Travers, always generous to an ally, wrote that it was to his 'courage and statesmanship (that) Bristol owes its University'. In January 1905, after his call upon Haldane, Travers confided in Fry who then 'became the active leader of the (university) movement'. Lloyd Morgan had not yet been informed.

In May 1904 Council had noted that the site and buildings on the Blind Asylum on which the Wills Memorial Building now stands was on the market for an estimated £40,000. What a wonderful opportunity. Here was a chance to provide for future expansion. The proposition was however almost entirely academic, for College finances were in their habitual state of penury. At this time University College shared a telephone line with the Blind Asylum. One day in December 1905 Travers found the line engaged, but hearing word of negotiations for the sale of the Blind Asylum, the temptation to listen further was too strong. He went straight to Lewis Fry, who said 'But what can we do?' Travers suggested that Mr. Fry should ask his brother Joseph Storrs to buy the option. On 11 January 1906 (though there appears to have been no public announcement until March) Lewis Fry told Travers that he had been promised the money — by his brother Joseph Storrs Fry (£10,000), his cousin Francis Fry (£5,000), Sir William Henry Wills (£10,000) and Sir Frederick Wills (£5,000).

Joseph Storrs Fry (1826-1913) was the eldest of the four gifted brothers. He never married and he devoted his life to his business, which as we have seen, greatly flourished under his direction, to his faith and to philanthropic causes. He espoused Quakerism throughout his life and was for fifteen years 'clerk' of the London Yearly Meeting, the highest position in his religious body. When he died, he left £42,000 to his employees. Prosperous though Joseph and Francis Fry became, their wealth pales when compared with that

of members of the Wills Family. Frederick Wills had been a benefactor in 1874 and had later served on the College Council until his work took him away from Bristol. He had been educated at Mill Hill and had then entered the family business. He was made a baronet in 1897 and later became a Unionist M.P. for Bristol North. He left an estate of £3,050,000. William Henry Wills (created Lord Winterstoke in 1906) was the cousin of Frederick. First chairman of the Imperial Tobacco Company in 1901, he had financed in 1904 the building of the City Museum and Art Gallery. His estate was to be worth over £2,500,000. By the year 1901 the family of Wills had become one of the richest in the land. There would be no purpose in labouring the point were we not concerned with how University College, Bristol gained its charter. In 1876 W.D. and H.O. Wills made a profit of £21,300: in 1901, before the Imperial Tobacco Co. merger, the profit was one of £750,000. This was not a matter of waxing fat on inherited stakes administered by employees. Each member of the family in varying degrees earned his money and none less so than Henry Overton (1828-1911) and his sons, two of whom, George Alfred (1854-1928) and Henry Herbert (1856-1922), made profoundly important contributions to university development in Bristol. The family were not Merchant Venturers, nor were they Anglicans or Conservatives. They were practising Congregationalists, and H. O. Wills II (1800-1871) collected and cherished thirty silver trowels as a record of foundation stones which he had laid for new churches.

Henry Herbert (Harry) had attended classes in the College in 1877 when he was serving his apprenticeship with the Avonside Engineering Company. In that year Silvanus Thompson had acted as a consultant when electricity was installed in Redcliffe Street at a cost of £135. Wills were regularly in the van of progress at this time and Harry was an English pioneer of mechanised cigarette production.

We may now follow the dramatic story which led to the charter of 1909. On 2 July 1906 a committee to promote a University of Bristol was established. Lewis Fry was its chairman and Travers — constantly complaining about postage charges and travelling expenses which were not reimbursed — was secretary. There was much to do, including healing the wounds of dissent with the Merchant Venturers and raising more money. Initial euphoria was clouded by deadlock with the Society, greatly irritating to almost all who were not of one allegiance or the other, and no further funds were forthcoming. In March 1907 the committee's meetings lapsed for nine months. On the evening of 14 January 1908 the University College Colston Society met for its ninth annual dinner. George

Alfred Wills was president for the year. He too had been to Mill Hill and had then entered the business. Unlike his brother Harry, he had never attended a College class. He had been Sheriff of Bristol in 1899 but was not a politician. There was, no doubt, a pleasant evening in store, but nothing momentous was expected. After the port had circulated, George rose to make what was perhaps the most exciting speech in Bristol's university history. He took a letter from his pocket and read its contents. The letter was from his father Henry Overton. 'I have decided', it said, 'to promise £100,000 towards the endowment of a University of Bristol and the West of England, provided a charter be granted within two years from this day'. There was a gasp in the audience and then prolonged cheering. 'It seemed', one guest said, 'as if all our troubles were over'. In 1908 H. O. Wills was an old gentleman of eighty — the first of eighteen children borne by two wives to his father of the same names. Since the early 1880s he had played no significant part in the business; he had exercised no civic or political office and his contacts with University College can only have derived from earlier memories that he had subscribed in 1874 and had sent Harry to classes there; he must also have learned from his family about College development. Then unexpectedly with a lavish gesture he beckoned to the future, giving in a moment more than all benefactions to University College had hitherto contributed. He died in 1911, the first Chancellor of the University of Bristol. His generosity had almost certainly been prompted by his sons. The fact that he could well afford his benefaction — he died with an estate worth more than £5,000,000 — is a mere footnote to our story. Yet of this gift it may be said that it played a vital part in shaping the reputation of scholarship not merely in Bristol and in the West of England but also in the wider world.

By midnight on 14 January 1908 four other gifts of £1,000 and a promise of a further £10,000 had brought the University endowment fund within sight of £150,000. Sixteen months later it stood at £203,000. In a very real sense therefore the University of Bristol began as a Wills creation; members of the family had given 79 per cent of this sum. Others, and certainly not least the Frys, had been generous according to their means and in giving had expressed a faith in the future. The munificence of George (treasurer of Bristol University from 1909 to 1918) and Harry Wills in later years belongs to another chapter. Inflation soon piled cost upon cost and the brave Memorial Building dedicated to the memory of Henry Overton eventually cost them £500,000. That is not the end of the story, for the first stage of the H. H. Wills Physics Laboratory, built and endowed by George in memory of his brother, cost

£200,000; Wills Hall (1929) was also expensive. Of course the brothers could afford what they did and had much money to spare; Harry left an estate worth £2,750,000 and George one of £10,000,000. The point is that money which had been hard-earned in a competitive world had been discriminatingly given to lasting effect.

For a year after the announcement of the gift of H. O. Wills there remained work to be done. The College was now in an obviously better negotiating position with respect to a charter than it had been hitherto and the Merchant Venturers knew this. But each side had its dignity and there was reluctance to yield on minor points, let alone the ones which really mattered. Lewis Fry bore the brunt of the day in searching for some common ground. The Merchants and Mr. Wertheimer wrestled, suspecting that there were sinister Liberal influences seeking to undermine their position. The Privy Council Office verged on irascibility as submission from one side followed in hot pursuit of the other. The granting of a charter was delayed. Eventually a mixture of exhaustion and persuasion, combined with an underground stream of reciprocity which was almost always there, brought a compromise. An argument which had been pursued with a hostility and which makes sad reading was resolved in compromise and in the process neither party lost face or dignity. Engineering was transferred to Unity Street as a faculty of the University, and as the years were to prove in much debt to hosts who disclaimed academic control and who helped in material ways. They were appropriately represented in the University.

On 24 May 1909 the royal sign manual was attached to a charter creating a University of Bristol. A week earlier the crown's intentions had become known. Bells had been rung by city churches and flags flown at the Council House. Looking back it would be implausible to argue that University College ever wore a mantle of greatness. In 1909 it was at the end of a laborious apprenticeship during which masters and men had shown diligence, patience and perseverance. It remained to be seen whether future practice would fulfil the promise of the past.

Of the hundreds of students who attended University College it seems right to think that the majority had cause for gratitude and of those who achieved distinction in later life I would like in closing to concentrate upon Arthur Mannering Tyndall. I do so for several reasons, not the least of which is that an earlier version of my theme was the subject of a lecture in the theatre which commemorates Tyndall in the H. H. Wills Physics School. Arthur Tyndall was the son of a prosperous ironmonger who had been educa-

ted at Redland Hill House, where no science except for a smattering of Chemistry was taught during his last two terms. He entered University College with a scholarship at the age of seventeen in 1897 with the intention of reading Chemistry. In fact the teaching of Arthur Chattock, Professor of Physics, quickly captured his imagination and he graduated in that subject in 1903. From 1907, when he became an assistant lecturer until his retirement in 1948 Tyndall was almost continuously in the service of University College or the University of Bristol, and in 1945, nearly fifty years after he entered the College, he became acting Vice-Chancellor. Elected a Fellow of the Royal Society in 1933, Tyndall became an inspired leader of the Bristol Physics School. After his death in 1961 two colleagues, one a Bristol graduate and a Nobel prize-winner wrote: 'If Bristol's growth from small beginnings has been happy, and if Bristol has been relatively free from those strains and frustrations which are occasionally experienced, it was in some part due to Tyndall'.

He was not the only student of University College who had graduated externally and was later elected to the Royal Society; one thinks also of S. R. Milner (F.R.S., 1922). Of course Tyndall was not a typical student but he was, like most of his contemporaries from a local background, living at home. University College had created an opportunity for him almost on his doorstep, and for those who knew him in his later years he provided a marvellous bridge between the past and the present; he was a repository of knowledge and the custodian of memories. Many of the men mentioned above were still vivid recollections, alive and active in Tyndall's mind. Through him it was possible to re-live the anticipations and the anti-climaxes, the hopes and the fears of earlier years. An outstanding characteristic of Tyndall was his tolerance and his generosity of judgement. There was seldom a note of rancour in the story he had to tell. One would like to think that this remains a characteristic of the University of Bristol today.

NOTE

This essay derives from the Frederick Creech Jones Memorial Lecture, which was given, without thought of publication, in October 1976 during the centenary week of University College. I am grateful to Professor P. V. McGrath for his criticism and for his patience while I found time to extend my lecture. His book on *The Merchant Venturers of Bristol* (Bristol 1975) helped with a difficult period of College History. The work of another colleague, Dr. B. W. E. Alford (*W. D. & H. O. Wills*; London, 1973) has been a pleasure to use and is recommended reading for all interested in recent Bristol history. Mr. George Mabe drew my attention to University archives which I might have missed and Mrs. Valerie Coles used her skill in the City Reference Library to my advantage. Miss Elizabeth Ralph, formerly City Archivist, told me about the surviving fragment of the autobiography of M. W. Travers. My greatest debt is to Dr. Charles Ross whose clarity of thought and felicity of style have, I hope, helped to improve my text. I also recall my association with Dr. Basil Cottle with whom I first worked on the history of University College many years ago. Most of the sources on which I have drawn are mentioned in the bibliographical note to my chapter in *University and Community* (Bristol, 1977). To these should be added M. W. Travers, *Sir William Ramsay* (London, 1956) which, granted the occasional error, catches the spirit of early University College, Bristol. Recollections of Alfred and Mary Paley Marshall are splendidly recorded in *The Collected Writings of J. M. Keynes*, (vol. X London, 1972). Miss Sue O'Neill and Mr. Peter Lawrence helped me to choose the illustrations and Mr. Gordon Kelsey prepared them for publications.

January 1977.

J.W.S.

